

ABSTRACT

A strong pressure and a strong shearing force are exerted to a mixture, constituted of two kinds or more of powder materials including a drug powder, while causing the mixture to pass between a press section (26) of a press head (24) and a receiving surface (25) of a cylindrical rotator (23), thereby combining the drug powder with the other powder material. For example, at least one of a drug and a biocompatible polymer is made into a nano particle whose average particle diameter is less than 1000 nm, and the nano particle is made into a composite in accordance with a dry mechanical particle combining method, so as to form a polymer nano composite particle. Thus, it is possible to produce a composite particle, which contains a drug under a stable condition, in a short time, and it is possible to remarkably improve its handling property without losing advantages of the nano particle. As a result, it is possible to favorably apply the foregoing technique to DDS of a powdery drug taken into the body through the lung or a similar drug.

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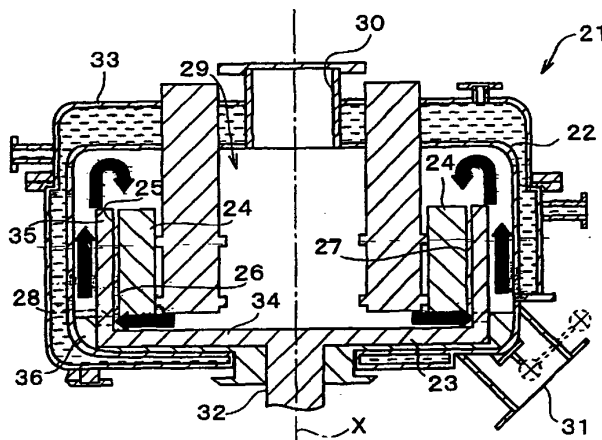
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(54) Title: METHOD OF MANUFACTURING CHEMICAL-CONTAINING COMPOSITE PARTICLES

(54) 発明の名称: 薬物含有複合粒子の製造方法



(57) Abstract: A method of manufacturing chemical-containing composite particles, comprising the steps of applying strong compressive force and shearing force to a mixture formed of two or more types of powder materials containing chemical powder when the mixture is passed through a clearance between the pressing part (26) of a press head (24) and the support surface (25) of a tubular rotating body (23) to combine the chemical powder with the other powder materials, for example, comprising the steps of pulverizing at least one of the chemical and living body compatible polymer into nano particles of less than 1000 nm in average grain size and combining the particles with the other by using a dry mechanical particle combination method to form polymer nano composite particles, whereby composite particles containing the chemical in stable state can be manufactured in a short time and the easiness of handling can be remarkably improved without impairing the advantages of the nano particles, for example, the composite particles can be suitably applied to DDS such as transpulmonary powder preparation.

(57) 要約: プレスヘッド (24) の押圧部 (26) と筒状回転体 (23) の受け面 (25) との間を通過させる際に、薬物粉末を含む 2 種以上の粉末原料よりなる混合物に強力な圧縮力および剪断力を加え、薬物粉末を他の粉末原料と複合化する。例えば、薬物および生体適合性高分子の少なくとも一方を、平均粒径が 1000 nm 未満のナノ粒子化し、乾式機械的

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